

February 21, 1997

MEMORANDUM

TO: Orville Green, Assistant Administrator
Air and Hazardous Waste Division

FROM: Martin Bauer, Chief *MB*
Air Quality Permitting Bureau

SUBJECT: Issuance of Amended Tier II Operating Permit #001-00044 to
Micron Technology, Inc. (Boise) - Installation of Three Diesel
Emergency Generators

PURPOSE

The purpose of this memorandum is to satisfy the requirements of IDAPA 16.01.01.200 (Rules for the Control of Air Pollution in Idaho) (Rules) for issuing Operating Permits (OP) and to satisfy requirements set forth in Tier II Operating Permit (#001-00044).

PROJECT DESCRIPTION

Micron Technology, Inc. (MTI), located in Boise, Idaho, submitted a letter to DEQ in which they requested to install three diesel emergency generators and for the amendment of Tier II OP #001-00044 that was issued to the facility on June 29, 1995. The proposed installation of the three emergency generators is allowed under the existing Tier II OP #001-00044. MTI also requested to raise the emission limits of NO_x, which is found in Appendix A of the facility's existing Tier II OP. PM-10 and VOC emission limits for two of the aggregated generators (i.e., EU1-GEN-06 and EU1-GEN-08) were also requested to be raised by MTI. The current NO_x, PM-10, & VOC emission limits in OP #001-00044 were calculated by using AP-42 emission factors. However, the requested raise in the emission limits for the generators were based on data obtained from the manufacturers.

In addition, MTI requested to change the naming convention of all the emergency generators that are found in OP #001-00044 in order to be consistent with its Tier I OP application.

SUMMARY OF EVENTS

On November 5, 1996, DEQ received a letter from MTI requesting to install three emergency generators and to amend Tier II OP #001-00044. On November 22, 1996, and January 31, 1997, MTI sent additional information to DEQ.

FEES

Amendment of the facility's Tier II OP is subject to permit application fee of \$500.00, as per IDAPA 16.01.01.470 (Rules).

RECOMMENDATIONS

Based on the review of the material submitted and on applicable state and federal regulations concerning the permitting of air pollution sources, the Bureau staff recommends that MTI, Boise, be issued an amendment to Tier II OP #001-00044. The requested increase in hourly emission limits of NO_x, PM-10, and VOC should not require a public comment period because these emission rates are more accurate -- obtained from the generators' manufacturers. The original limits for those pollutants were calculated using emission factors from AP-42. The annual emission limits remain unchanged. Staff also recommends that MTI be notified in writing of the obligation to pay permit application fees for Tier II OP amendment, as per the Rules.

ODG\MB\RAE:jrf...\permit\micron\micron-a.IMM

cc: Boise Regional Office
OP File Manual
P. Rayne/AFS
Source File
COF

February 21, 1997

MEMORANDUM

TO: Martin Bauer, Chief
Air Quality Permitting Bureau
Air & Hazardous Waste

FROM: Harbi Elshafei, Air Quality Engineer *Harbi*
Air Quality Permitting Bureau

THROUGH: Susan J. Richards, Air Quality Permit Manager *SK*
Air Quality Permitting Bureau

SUBJECT: Technical Analysis for Amended Tier II Operating Permit #001-00044
Micron Technology, Inc. Boise, (Installation of Three Diesel Emergency Generators)

PURPOSE

The purpose for this memorandum is to satisfy the requirements of IDAPA 16.01.01.400 and IDAPA 16.01.01.200 (Rules for the Control of Air Pollution in Idaho) and the requirements set forth in the facility's Tier II Operating Permit (OP) #001-00044.

PROJECT DESCRIPTION

This project is for a request from Micron Technology, Inc. (MTI) to install three diesel emergency generators. The emergency generators are of capacities of 1851 horsepower or less, each. This project also involves raising the short term emission limits for PM-10, NO_x, and VOC which are found in Appendix A of the facility's existing Tier II OP. The current NO_x, PM-10, and VOC emission limits in OP #001-00044 were calculated by using AP-42 emission factors. However, the requested raise in the emission limits for the generators were calculated based on data obtained from the manufacturers.

In addition, MTI requested to change the naming convention of all the emergency generators that are found in OP #001-00044 in order to be consistent with its Tier I OP application.

The three aggregated emergency generators that MTI requested to add at the facility are as follows:

1. Diesel Emergency Generator (EU2-GEN-10) - Caterpillar, Model: 3512B, Capacity: 1826 hp.

Stack Design Specifications

Height:	13.0 feet
Exit Diameter:	0.66 feet
Exit Gas Flow Rate:	11,167 acfm
Exit Temperature:	819°F

2. Diesel Emergency Generator (EU2-GEN-11) - Caterpillar, Model: 3512B, Capacity: 1826 hp.

Stack Design Specifications

Height:	13.0 feet
Exit Diameter:	0.66 feet
Exit Gas Flow Rate:	11,167 acfm
Exit Temperature:	819°F

3. Diesel Emergency Generator (EU2-GEN-12) - Caterpillar, Model: 3512B, Capacity: 1826 hp.

Stack Design Specifications

Height:	13.0 feet
Exit Diameter:	0.66 feet
Exit Gas Flow Rate:	11,167 acfm
Exit Temperature:	819°F

The Tier II OP which was issued to the facility on June 29, 1995, included five diesel emergency and aggregated generators. After the revision of the Tier II OP, the process descriptions, control equipment, and stack design specifications that are found in the Tier II OP are removed from the permit and are included in this memo. They are as follows:

Process Description

There are five (5) emergency diesel generators (i.e., EU2-GEN-01, EU2-GEN-02, EU2-GEN-03, EU2-GEN-04, & EU2-GEN-05) located at different locations at Micron Technology, Inc., with rated capacities of 475, 339, 1443, 1851, and 263 hp, respectively. The emergency generators are present at the facility in the event of an unexpected loss of power. The emergency generators are used to maintain the production equipment in an idle, standby mode until power is restored. No production of semiconductors would occur during either the power down or idle phases.

Control Equipment

Control of sulfur dioxide (SO₂) emissions shall be performed by burning No. 2 and/or No. 1 fuel oil which has a sulfur content of no more than 0.5 percent by weight. Other pollutants resulting from combustion are uncontrolled.

Stack Design Specifications

The generator stacks shall meet the following design specifications:

Specifications for EU2-GEN-01 stack:

Stack Height: 9.0 feet
Stack Diameter: 0.5 feet
Volumetric Flow Rate: 2568 acfm
Exit Temperature: 1010°F

Specifications for EU2-GEN-02 stack:

Stack Height: 9.0 feet
Stack Diameter: 0.5 feet
Volumetric Flow Rate: 1921 acfm
Exit Temperature: 992°F

Specifications for EU2-GEN-03 stack:

Stack Height: 13.0 feet
Stack Diameter: 0.75 feet
Volumetric Flow Rate: 8275 acfm
Exit Temperature: 878°F

Specifications for EU2-GEN-04 stack:

Stack Height: 15.0 feet
Stack Diameter: 0.75 feet
Volumetric Flow Rate: 9620 acfm
Exit Temperature: 905°F

Specifications for EU2-GEN-05 stack:

Stack Height: 12.0 feet
Stack Diameter: 0.5 feet
Volumetric Flow Rate: 1465 acfm
Exit Temperature: 1270°F

Equipment Specifications

EU2-GEN-01	Type: Caterpillar 3406;	Capacity: 475 hp
EU2-GEN-02	Type: Caterpillar 3306;	Capacity: 339 hp
EU2-GEN-03	Type: Caterpillar 3512;	Capacity: 1443 hp
EU2-GEN-04	Type: Cummings KTA 50-G3;	Capacity: 1851 hp
EU2-GEN-05	Type: Caterpillar 3208;	Capacity: 263 hp

Additional generators with capacities not to exceed 1851 hp.

SUMMARY OF EVENTS

On November 5, 1996, DEQ received a letter from MTI notifying DEQ with the intend to construct three additional diesel emergency generators. MTI also requested in the letter to raise the short term emission limits of PM-10, NO_x, and VOC which are found in Appendix A of the facility's OP #001-00044. On November 22, 1996, and January 31, 1997, MTI sent additional information to DEQ.

DISCUSSION

1. Emission Calculations

MTI estimated the short term emission limits for PM-10, NO_x, and VOC from the three emergency generators exhaust stacks by using emission factors supplied by the generators' manufacturers. The PM-10, NO_x, and VOC emission estimates are expected to be more accurate than those obtained from AP-42 because they are source specific for the generators. A copy of the emission estimations performed by the applicant is presented in Appendix A of this memo.

It should be noted that all PM emissions are assumed to be PM-10.

No change was made in the long term emission limits, as it is not requested by the applicant.

Emission estimates are based on 200 hours of operations for each generator per year.

2. Modeling

Modeling of emissions from the three emergency generators was performed by MTI to predict the impact of PM-10 and CO concentrations in Boise (area is non-attainment for the two pollutants). The modeling results demonstrated that the increase of emissions of PM-10 from 1.05 lb/hr to 1.18 lb/hr will not cause or significantly contribute to a violation of the National Ambient Air Quality Standards (NAAQS). Modeling of CO emissions was performed, though pollutant emissions are unchanged from the previous emissions that are found in the existing Tier II OP, and the impact was found to be below NAAQS. DEQ's meteorologist, Mary Walsh, concurred with MTI modeling results.

A technical memo by Mary Walsh, DEQ Meteorologist, regarding the modeling of emissions from the emergency generators is included in Appendix B.

3. Area Classification

Micron Technology is located in Boise. Boise is designated a non-attainment for PM-10 and CO. For other criteria air pollutants, the area is classified as attainment or unclassified.

4. Facility Classification

MTI is a major facility, as defined in IDAPA 16.01.01.006.54 and as defined in IDAPA 16.01.01.008.14. The facility potential to emit for VOC is greater than 100 TPY. The facility is not a designated facility as defined in IDAPA 16.01.01.25.

5. Regulatory Review

Amendment to Tier II OP #001-00044 is subject to the following permitting requirements:

- | | |
|------------------------------|--|
| a. <u>IDAPA 16.01.01.200</u> | Procedures and Requirements for Permits to Construct. |
| b. <u>IDAPA 16.01.01.400</u> | Procedures and Requirements for Tier II Operating Permits. |
| c. <u>OP #001-00044</u> | Requirements set forth in OP #001-00044. |

6. AES/Data Management Issues for the Three Aggregated Generators

AIRS Point No. EU2-GEN-10	SCC# 20200401
AIRS Point No. EU2-GEN-11	SCC# 20200401
AIRS Point No. EU2-GEN-12	SCC# 20200401

FEES

Fees apply to the facility. Amendment of the facility's Tier II OP is subject to permit application fee, as per IDAPA 16.01.01.470.

RECOMMENDATIONS

Based on the review of the material submitted and on applicable state and federal regulations concerning the permitting of air pollution sources, the Bureau staff recommends that MTI, Boise, be issued an amendment to Tier II OP #001-00044. The requested increase in emission limits of NO_x, PM-10, and VOC should not require a public comment period because these emissions are more accurate -- obtained from the generators' manufacturers. The original limits for those pollutants were calculated using emission factors from AP-42. Staff members also recommend that MTI be notified in writing of the obligation to pay permit application fees for Tier II Op amendment, as per the Rules.

NE\SJF\AES:jrc...\permit\micron\micron-s.7AM

cc: S. West, Boise Regional Office
Source File
COF

APPENDIX A

MICRON

TECHNOLOGY, INC.

November 22, 1996

CERTIFIED MAIL NO. P 478 696 902

Mr. Harbi Elshafei
Idaho Division of Environmental Quality
Operating Permits Bureau
1410 North Hilton
Boise, ID 83720-0502
FAX: (208) 373-0417

Re: Generator Manufacturer's Emission Data

Dear Mr. Elshafei:

The following pages are copies of the generator manufacturer's emission data obtained by Micron Technology, Inc. (MTI) that you requested by phone on November 21, 1996. This data was used for the short-term emissions for the following generator models:

<u>Manufacturer</u>	<u>Model</u>	<u>Capacity (HP)</u>	<u>Tier I Permit Application Emission Units</u>
Caterpillar	3512	1818	EU2-GEN-06 and EU2-GEN-08
Caterpillar	3512B	1826	EU2-GEN-10, EU2-GEN-11, and EU2-GEN-12
Cummins	KTA50-G3	1850	EU2-GEN-04 and EU2-GEN-07

The Caterpillar data sheets on emissions were obtained from the Caterpillar vendor. The vendor accesses an on-line system to obtain data on specific generator models. The following page shows a data sheet for the Caterpillar model 3512 that corresponds to EU2-GEN-06 and EU2-GEN-08. These generators are operated at 100% load to generate 1250 KW. The corresponding line for the generation of 1250 KW shows that particulate matter emissions are 1.175 lb/hr. Since MTI's emission limit for PM10 is currently 1.05 lb/hr, MTI is requesting that this limit be raised to be consistent with the manufacturer's emissions.

The next two Caterpillar data sheets are for the Caterpillar model 3512B that corresponds to EU2-GEN-10, EU2-GEN-11, and EU2-GEN-12. These generators are operated to generate 1250 KW which is not shown on the data sheets. A generation of 1260 KW is shown that coincides to an operating HP of 1826 at 90% load. Emissions data for this model operated for 1250 KW are also not available; therefore, the emissions for operation at 100% load is assumed. The hydrocarbon emissions (which are assumed to equal VOC emissions) at 100% load are 1.63 lb/hr. Since MTI's emission limit for VOCs is currently 1.4 lb/hr, MTI is requesting that this limit be raised to be consistent with the manufacturer's emissions.

Mr. Harbi Elshafei
November 22, 1996
Page 2

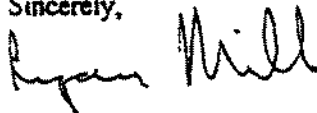
The last data sheet was obtained from the Cummins vendor for the model KTA50-G3 that corresponds to EU2-GEN-04 and EU2-GEN-07. This data shows that the emission factor for NOx is 12.60 grams/HP-hour. The calculation for this generator at 1850 HP is:

$$12.60 \frac{\text{grams}}{\text{HP} - \text{hour}} \times 1850 \text{ HP} \times \frac{1 \text{ lb}}{453.6 \text{ grams}} = 51.4 \frac{\text{lb}}{\text{hr}}$$

Since MTI's emission limit for NOx is currently 32.6 lb/hr, MTI is requesting that this limit be raised to be consistent with the manufacturer's emissions.

As we discussed on the phone, the changes MTI is requesting are for the short-term limits only. MTI is not requesting any changes to the ton/year caps. If you have any questions or concerns, please contact me at 368-5441.

Sincerely,



Ryan Mills
Environmental Engineer

/rm

ATTACHMENTS

cc: Mike McIntyre, Micron Technology, Inc. (with attachments)
Rob Sterling, Micron Technology, Inc. (with attachments)

-GKGPE1-

TMI - ENGINE AND COMP PERF

DATE: 10/01/96

09 - PACKAGE SET PERFORMANCE

TIME: 18:17:2

3512 DI TA JW DRY MANF TURBO QTY

WDWRD GOV

TM3402-07 PGS STANDBY 60 HERTZ EXH STK DIA 10.0 IN

GEN 1250.0 W/F EKW 1252.0 W/O F EKW W/F BHP 1818 W/O F BHP @ 1800 RPM

INFO CODE 05 - EMISSIONS DATA * * * * * RATED SPEED * * * * * STANDARD TIMING

"NOMINAL DATA"

O2 (DRY)

GEN	ENG	NOX	CO	TOTAL	CO2	PART	IN EXH	SMOKE	BOS
PWR	PWR	(AS NO2)		HC		MATTER	(VOL)	OPAC	SMC
EKW	LOAD	BHP	* * * * *	LB/HR	* * * * *	* * * * *	%	%	NC

1250.0	100	1786.0	33.22	6.19	.42	1959.5	1.175	9.35	4.3	1.
937.5	75	1340.0	29.76	3.34	.78	1417.0	.589	10.21	2.7	1.
625.0	50	900.0	23.14	2.31	.84	1058.3	.525	11.55	4.7	1.
312.5	25	468.0	11.64	1.51	.71	581.5	.386	11.89	2.5	1.
125.0	10	204.0	5.41	.98	.55	307.7	.238	9.73	0.1	0.

PRESS <ENTER> FOR ADDITIONAL DATA

NEXT TRAN: INFO CODE (05) UNIT TYPE (E) NTE ()

OTHER METRIC DISPLAYS: MG/NM3 () PPM () G/HP-HR ()

HLP-F1 ACF-F3 PGM-F4 SEL-F5

IDX-F9

10/01/96 16:58:0

-GKPGN1

TMI - ENGINE AND COMP PERF

DATE: 09/24/

09 - PACKAGE SET PERFORMANCE

TIME: 09:39:

3512B DI TA SC DRY MANF TURBO QTY 4 PARALLEL ADEM GOV

DM1726-04 PGS STANDBY 60 HERTZ EMISSIONS STRATEGY A/C TEMP: DEG F 140

GEN 1400.0 W/F EKW 1445.0 W/O F EKW W/F BHP 2032 W/O F BHP @ 1800

CERTIFICATION YEAR

CERT AGENCY

INFO CODE 01 - GENERAL PERFORMANCE DATA * * * * *

GEN	PER	ENG	ENG	S FUEL	FUEL	INTAKE	INTAKE	INTAKE	EXH	EXH	EX
W/F	CENT	PWR	BMEP	CONSUM	RATE	MANF T	MANF P	AIR FL	MANF T	STK T	GAS
EKW	LOAD	BHP	PSI	LB/BHP-HR	GPH	DEG F	IN-HG	CFM	DEG F	DEG F	CF

1400.0	100	2025	282	.361	104.5	176	76.6	4640	1251	876	12
1260.0	90	1826	255	.356	93.0	172	70.4	4378	1172	819	10
1120.0	80	1629	227	.357	83.1	169	63.9	4075	1112	795	9
1050.0	75	1531	213	.358	78.3	168	60.7	3909	1085	784	8
980.0	70	1433	200	.358	73.3	166	56.3	3722	1058	772	7
840.0	60	1237	172	.357	63.1	161	46.0	3316	1005	745	6
700.0	50	1042	145	.356	53.0	157	35.8	2913	954	717	5
560.0	40	852	119	.365	44.4	153	27.5	2542	915	696	4

-GKGPB1-

TMI - ENGINE AND COMP PERF

DATE: 09/24/98

09 - PACKAGE SET PERFORMANCE

TIME: 09:40:1

3512B DI TA SC DRY MANF TURBO QTY 4 PARALLEL ADEM GOV

DM1726-04 PGS STANDBY 60 HERTZ EXH STK DIA 8.0 IN

GEN 1400.0 W/F BHP 1445.0 W/O F BHP W/F BHP 2032 W/O F BHP @ 1800 RPM

EMISSIONS STRATEGY A/C TEMP: DEG F 140

INFO CODE 05 - EMISSIONS DATA * * * * * RATED SPEED * * * * * STANDARD TIMING

"NOT TO EXCEED DATA"

O2 (DRY)

GEN		ENG	NOX		TOTAL		PART	IN EXH	SMOKE	BOS
PWR	%	PWR	(AS NO2)	CO	HC		MATTER	(VOL)	OPAC	SMC
BKW	LOAD	BHP	* * * * *	* * * *	LB/HR	* * * *	* * * *	%	%	NC
1400.0	100	2025.4	32.55	11.92	1.63		.850	10.40	2.3	1.
1050.0	75	1530.9	24.03	10.08	1.36		.630	11.60	2.0	1.
700.0	50	1042.5	19.27	7.53	1.01		.450	12.50	1.9	1.
350.0	25	561.0	12.71	6.55	.86		.350	13.80	2.2	1.
140.0	10	262.6	8.08	5.97	1.10		.300	15.70	2.3	1.

use emission for 1400 KW (conservative)

Injection Cummins
4.0 (102)
8.0 (203)
6.5 (165)
165 (625)



1250 DFLC

ONAN GENERATOR SET

EXHAUST EMISSIONS DATA SHEET

ENGINE

Model: Cummins **KTA50-G3**

Type: 4 cycle, 60°V 16 Cylinder Diesel

Aspiration: Turbocharged and Aftercooled

Compression Ratio: 13.9:1

Emissions Control Device: Turbocharged and Aftercooled, with Variable Timing

Bore: 6.25 in. (159 mm)

Stroke: 6.25 in. (159 mm)

Displacement: 3067 cu. in. (50.3 liters)

PERFORMANCE DATA *

BHP @ 1800 RPM (60 Hz)

Fuel Consumption (gal/Hr)

Air to Fuel Ratio

Exhaust Gas Flow (CFM)

Exhaust Gas Temperature (°F)

STANDBY

1850

84.0

26.5

9620

905

PRIME

1635

74.5

26.3

8845

885

* The performance and emissions data shown here correspond to the maximum available engine power, and may not coincide with the operating data shown in the Generator Set Specification Sheet.

EXHAUST EMISSIONS DATA

(All values are grams/HP-Hour @ max BH

COMPONENT

STANDBY

PRIME

HC (Total Unburned Hydrocarbons)

0.13

0.17

NO_x (Oxides of Nitrogen as NO₂)

12.60

11.70

CO (Carbon Monoxide)

0.58

0.61

PM (Particulate Matter)

0.07

0.08

SO₂ (Sulfur Dioxide)

0.57

0.57

CO₂ (Carbon Dioxide)

470

470

N₂ (Nitrogen)

3000

3100

O₂ (Oxygen)

410

460

H₂O (Water Vapor)

170

170

TEST CONDITIONS

Data was recorded during steady-state rated engine speed (± 25 RPM) with full load ($\pm 2\%$). Pressures, temperatures and emission rates were stabilized.

Fuel Specification: ASTM D975 No. 2-D diesel fuel with 0.2% sulfur content (by weight) and 42-50 cetane number.

Fuel Temperature: 99°F $\pm 9^\circ$ (at fuel pump inlet)

Intake Air Temperature: 77°F $\pm 9^\circ$

Barometric Pressure: 29.6 in. Hg ± 1 in.

Humidity: NO_x measurement corrected to 75 grains H₂O/lb dry air

The HC, NO_x and CO emissions data tabulated here were taken from a single engine under the test conditions shown above. Data for components are estimates. This data is subject to instrumentation, measurement and engine-to-engine variability. Engine operation excessive air intake or exhaust restriction beyond published maximum limits, or with improper maintenance, may result in elevated emissions.

Dec - 91

Specifications May Change Without Notice.

ED

Onan Corporation 1400 73rd Avenue N.E. Minneapolis, MN 55432 (612) 574-5000

KTA50-G3
DS-4892
September, 1992

APPENDIX B

March 31, 1997

MEMORANDUM

TO: Robert Wilkosz, Chief, Technical Services Bureau (TSB),
Air and Hazardous Waste (A&HW)

FROM: Mary Walsh, Air Quality Meteorologist, TSB, A&HW *mw*

THRU: Avijit Ray, Sciences Manager, TSB, A&HW *Ray*

SUBJECT: Modeling/Impact Assessment for Micron Technology, Inc. (Ada County)

1. SUMMARY

On November 5, 1996, Micron Technology, Inc. (Micron) sent a letter to DEQ requesting permission to install three additional diesel emergency generators at their facility on Federal Way in East Boise, Idaho. Micron self exempted the construction of these new generators as per a Category II exemption listed in IDAPA 16.01.01.221.04.d (Rules for the Control of Air Pollution in Idaho). The installation of these generators is allowed under the Aggregated Generators section of the facility's existing Tier II Operating Permit (OP). The facility further requested an amendment of their OP to more accurately reflect the hourly emissions of NO_x, PM₁₀, and VOCs. Although this will result in an increase of the short-term emission limits listed in the permit, the values have been supplied by the generators' manufacturer and as a result more accurately reflect the actual emissions being produced. Since these changes will not require any physical alterations to be made, they do not fall under the definition of a modification. It was further determined that more information, regarding the pollutant emissions, was needed. On November 27, 1996, the requested information was received by the Department.

On December 10, 1996, a meeting was held between Ryan Mills of Micron and representatives of DEQ to discuss the modeling requirements needed to meet IDAPA 16.01.01.221.03 (Rules for the Control of Air Pollution in Idaho). Modeling methodologies and receptor locations were discussed. At the time of the meeting, Micron had already carried out the modeling needed to evaluate the impact of the proposed changes upon ambient PM₁₀ and NO_x concentrations. Since CO impacts were not analyzed in the initial analysis, the facility agreed to model out the CO concentrations to ensure that the applicable standards would be met.

A review of the applicant's final ambient impact analysis showed the evaluation to be consistent with DEQ approved methodologies. Maximum impacts for each pollutant were predicted to be within the applicable limits providing that operations are restricted when burn bans or Air Stagnation Advisories (ASAs) are in effect.

2. DISCUSSION

2.1 Project Description

The applicant has proposed the installation of three new emergency generators at their manufacturing facility on Federal Way in East Boise. They have also requested an increase of the emission limits set forth in their June 29, 1995, OP. The changes being proposed would affect the short-term limits only. The ton/year caps would not be influenced by these modifications.

In order to obtain a Category II exemption for the new generators, an analysis demonstrating compliance with all the applicable air quality standards (IDAPA 16.01.01.221.03) was required. Furthermore, it was necessary to show that the standards would not be exceeded by the requested increase in emission limits.

2.2 Applicable Air Quality Impact Limits

Northern Ada County is considered nonattainment for both PM_{10} and CO. The maximum allowable impacts for these two pollutants are based on the significant contribution limits for all averaging periods other than the 24-hour PM_{10} which is based on the highest PM_{10} concentration that can occur before an ASA is called by the Department. Thus, the 24-hour PM_{10} impact limit is $150 \mu g/m^3$. Although the changes being proposed would affect the short term emission limits only, the annual impacts were conservatively determined under the assumption of 200 hours of operation at the maximum 24-hour impact level. Since the proposed emission changes would affect these short term impacts, the annual concentrations had to be reevaluated and compared to the annual PM_{10} significant contribution limit of $1 \mu g/m^3$. For CO, the impact limits are $500 \mu g/m^3$ for the 8-hour averaging period and $2000 \mu g/m^3$ for the 1-hour averaging period. The National Ambient Air Quality Standards (NAAQS) apply for all other criteria pollutants. The annually based NAAQS for NO_2 is $100 \mu g/m^3$.

2.3 Background Concentrations

The PM_{10} background concentration, in the nonattainment area, is at or above the NAAQS of $150 \mu g/m^3$. Since a mandatory burn ban is issued when PM_{10} concentrations are greater than $100 \mu g/m^3$, this value has been conservatively chosen as the background concentration for those times when restrictions on burning are not in effect. A background concentration of $50 \mu g/m^3$ (annual average) has been established for NO_x . This value has been recommended by the EPA as a very conservative number for the northwest and for those areas in which co-contributing sources may affect the ambient concentrations.

2.4 Co-contributing Sources

Co-contributing sources were not considered in this analysis.

2.5 Modeling Impact Assessment

In order to satisfy the requirements for a Category II exemption, it was necessary to show that the three new generators would not cause or significantly contribute to a violation of the applicable air quality standards. To accomplish this, an air dispersion modeling analysis, utilizing the newest version of the ISCST3, was completed. Boise meteorological data, for the year 1990, was used in the analysis.

The ambient impact assessments were based on the conservative assumption that all of the sources operated simultaneously for the full duration of the analysis. Projections for those averaging periods less than 200 hours were based on the assumption of continuous operation. Annual impacts were conservatively based upon the assumption of 200 hours of operation at the maximum 24-hour impact level. Building downwash was included in the analysis. The potential impact of the proposed changes was determined for an extensive number of receptors surrounding the facility.

Where applicable, manufacturer recommended emission rates were analyzed. The facility has requested that the maximum emission rates used in the modeling run be established as the short-term limits for their Tier II OP.

A review of the supporting information, submitted by the facility, has shown the ambient analysis to be consistent with DEQ approved methodologies. Furthermore, the modeled output has been shown to meet the applicable air quality standards. The following table is a summary of the modeling results.

POLLUTANT	PREDICTED CONC.* ($\mu\text{g}/\text{m}^3$)	AVG PERIOD	ALLOWABLE IMPACT ($\mu\text{g}/\text{m}^3$)	IMPACT LIMIT (%)
PM ₁₀	132.90	24-hour	150.00	89
PM ₁₀	0.75	annual	1.00	75
CO	1289.00	1-hour	2000.00	64
CO	493.00	8-hour	500.00	99
NO _x	63.20	annual	100.00	63

* This value includes the background concentration where applicable.

Memo to R. Wilkosz
March 31, 1997
Page 4

The facility's predicted 24-hour PM_{10} and annual NO_x impacts were determined by adding the modeled output to the appropriate background concentrations. A more in-depth account of the analysis can be found in the source file.

3. MODELING RESULTS

See source file. Electronic copies are saved on disk.

MW/rs micron.tcc

cc: H. Elshafei
COF (w/out attachments)